Lown, Jessica [DPS]

From: Nieuwsma, Gary [DPS]
Sent: Monday, February 04, 2013 8:20 AM
To: Lown, Jessica [DPS]
Subject: FW: Freedom of Information Request: Iowa Department of Public Safety Police Drone Documents

Jessica,

I believe you are the person tasked with responding to open records requests.
I don't know if you are on the ISP info email group, but if not, this came through the ISP info site.
Let me know if you need anything further.

Captain Gary Nieuwsma
Field Operations
Iowa State Patrol
Oran Pape State Office Building
215 E. 7th St.
Des Moines, IA. 50319
Phone: 515-725-6109
Fax: 515-725-6118

NOTICE This e-mail message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this e-mail by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this e-mail or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

-----Original Message-----
From: 2709-42369701@requests.muckrock.com [mailto:2709-42369701@requests.muckrock.com]
Sent: Sunday, February 03, 2013 6:13 PM
To: DPS - ispinfo
Subject: Freedom of Information Request: Iowa Department of Public Safety Police Drone Documents

February 3, 2013
Iowa Department of Public Safety
Iowa Department of Public Safety
215 East 7th Street
Des Moines, Iowa 50319

To Whom It May Concern:

Pursuant to the Iowa Open Records Law (Code Chapter 22), I hereby request the following records:

1. any requests for proposals, proposals submitted by vendors, contracts, budgets or cost allocations for the purchase, research of and/or use of aerial drones, UAs, UAVs, and UASs (hereinafter "drones");

2. any policies, guidelines, manuals and/or instructions on institutional use of drones, including on the legal process required (such as a warrant or court order), if any, before operating a drone;

3. any departmental records concerning this institution's use of and/or research of drones now or plans to use drones in the future including:

a. the types of investigations or instances in which this department is using or plans to use drones, or how it plans to support, manage or oversee the usage of drones by another department or office;

b. policies, guidelines, manuals and/or instructions on storage requirements or procedures for video or static images obtained through use of drones, including retention times;

c. the altitude at which drones can or do fly;

d. drones' ability to carry weapons.

I also request that, if appropriate, fees be waived as I believe this request is in the public interest. The requested documents will be made available to the general public free of charge as part of the public information service at MuckRock.com, processed by a representative of the news media/press and is made in the process of news gathering and not for commercial usage.

In the event that fees cannot be waived, I would be grateful if you would inform me of the total charges in advance of fulfilling my request. I would prefer the request filled electronically, by e-mail attachment if available or CD-ROM if not.

Thank you in advance for your anticipated cooperation in this matter. I look forward to receiving your response to this request within 10 business days, as the statute requires.

Sincerely,

Shawn Musgrave

Filed via MuckRock.com
E-mail (Preferred): 2709-42369701@requests.muckrock.com

For mailed responses, please address (see note):
MuckRock News
DEPT MR 2709
PO Box 55819
Boston, MA 02205-5819

PLEASE NOTE the new address as well as the fact that improperly addressed (i.e., with the requester's name rather than MuckRock News) requests might be returned by the USPS as undeliverable.

Saunders, Jim [DPS]

From: Noelck, Christopher [DPS]
Sent: Wednesday, February 06, 2013 12:46 PM
To: Saunders, Jim [DPS]
Subject: Fwd: Product Sheets
Attachments: image001.jpg; image002.jpg; image003.jpg; image004.jpg; image005.jpg

SA C. J. Noelck
DPS - Division of Intelligence
noelck@dps.state.ia.us
Cell: 712-250-0116

Begin forwarded message:

From: "Brandon Haney" <westernsales@gpsintel.com>
Date: January 25, 2013, 16:35:13 CST
To: "Noelck, Christopher [DPS]" <noelck@dps.state.ia.us>
Subject: RE: Product Sheets

http://www.lockheedmartin.com/us/mst/features/120808-small-packages-pack-big-punch.html
http://www.microaerialprojects.com
http://www.microdrones.com/index.php
http://www.hoverflytech.com/venu.html
http://www.draganfly.com
http://www.cybertechuav.com.au
http://www.uconsystem.com/english/product/product02_5.asp
http://www.aeryon.com/products/avs.html

Brandon Haney
Western Region Sales Manager
CovertTrack Group, Inc.
9393 N. 90th Street | Suite 108B | Scottsdale, Arizona 85258
Phone (480) 661-1916 ext 211 **Direct** (480) 699-5064 | **Fax** (480) 451-5421
Email: westernsales@gpsintel.com

TECHNICAL SUPPORT (480) 657-9545





Please contact me directly for more information on our products and services!

CONFIDENTIALITY NOTICE This email is covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521 and is legally privileged. This e-mail is only for the personal and confidential use of the individuals to which it is addressed and contains

confidential information. If you are not the intended recipient, you are notified that you have received this document in error, and that any reading, distributing, copying or disclosure is unauthorized. If you have received this communication in error, please notify the sender immediately by the telephone number above and destroy the message.

From: Noelck, Christopher [DPS] [mailto:noelck@dps.state.ia.us]
Sent: Thursday, November 15, 2012 12:53 PM
To: westernsales@gpsintel.com
Subject: Re: Product Sheets

Do you happen to have any contacts to purchase or lease a UAV (Drone)?

-

C. J. Noelck, Special Agent
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th St.
Des Moines, IA 50319-0049
Cell: (712)-250-0116
Fax: (712)-243-4736
noelck@dps.state.ia.us
cnoelck@mocic.riss.net
christopher.noelck@leo.gov

From: Brandon Haney [mailto:westernsales@gpsintel.com]
Sent: Wednesday, November 14, 2012 06:04 PM
To: Noelck, Christopher [DPS]
Subject: Product Sheets

Here is a summary of which product sheets go with each estimate.

Estimate 1223....**Stealth II.pdf** Designed exclusively for law enforcement, the STEALTH II is simply the most cost-effective, covert tracking device available.
Estimate 1224....**MicroTracker Law.pdf** The MicroTracker II is a miniature GPS tracker with superior sensitivity designed for vehicle and asset tracking.
Estimate 1225....**HEAT.pdf** The HEAT is a miniature, heat-sealed GPS tracker with a Radio Frequency Chip to supplement GPS tracking in GPS obstructed areas.
Estimate 1226....**Surveillance Phone.pdf** Surveillance Phone package which includes the Galaxy III S phone, with GPS, Remote Video and Remote Audio.
Estimate 1227....**Surveillance Phone.pdf** GPS-only Application, no phone included , with live 5 second updates and mapping service.

As we discussed, if you need a sole source letter, I can provide that when needed on most of these estimates.

Best,

Brandon Haney
Western Region Sales Manager
CovertTrack Group, Inc.
9393 N. 90th Street | Suite 108B | Scottsdale, Arizona 85258

Phone (480) 661-1916 ext 211 Direct (480) 699-5064 | Fax (480) 451-5421
Email: **westernsales@gpsintel.com**

TECHNICAL SUPPORT (480) 657-9545



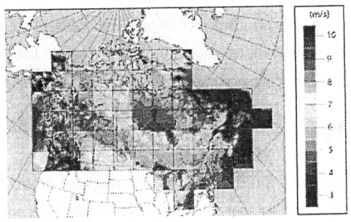
COVERTTRACK GROUP, INC
Technical Surveillance Equipment
AUDIO VIDEO GPS TRACKING

Please contact me directly for more information on our products and services!

CONFIDENTIALITY NOTICE This email is covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521 and is legally privileged. This e-mail is only for the personal and confidential use of the individuals to which it is addressed and contains confidential information. If you are not the intended recipient, you are notified that you have received this document in error, and that any reading, distributing, copying or disclosure is unauthorized. If you have received this communication in error, please notify the sender immediately by the telephone number above and destroy the message.

Considerations in Selecting a Small UAV for Police Operations

Small, or micro, Unmanned Aerial Vehicles (UAVs) or Unmanned Aerial Systems (UAS) are quickly entering the market for practical use in law enforcement, choosing the right solution can appear daunting. With equipment purchases typically between 15 and 5 percent of total budgets, making the right decision is essential.



How do you now which system provides the best solution for your needs?

First it is important to define what your needs are. Policing organizations are constantly being asked to do more with greater financial constraints. Therefore the solution needs to be able to support multiple situations such as:

Accident Investigation	CBRNE Incident
Search and Rescue	Covert Tactical Surveillance
Drug Plantation Investigations	Forensic Scenes
Disaster Management	Support for Arrest Warrants
Crowd Control	Gunfire Rescue of officers and citizens
Explosive Ordinance Disposal	VIP Security support
Hostage and Barricade Situations	Perimeter security

First we will review the requirements that law enforcement need to evaluate when selecting a small unmanned aerial system, followed by reviewing a system that meets these needs.

Needs

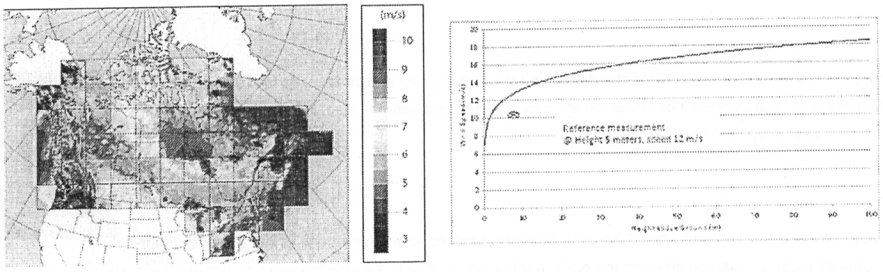
The need for police organizations is to provide immediate aerial intelligence while ensuring the safety of police personnel, civilians and property. There are many ways this need can be met. Each has different costs and requirements. For the purpose of this paper, the focus is on the criteria for the selection of a small UAV that be used to support police operations.

Operation Conditions

Crime and accidents don't only occur on calm, sunny days. Police must be ready to respond to an incident at any time, therefore the equipment they choose must be capable of use in a variety of weather conditions - from sunny warm days, through rain and snow, high temperatures and significant wind. For example, in Vancouver, Canada, 45% of the days have rain, even in Albuquerque, New Mexico USA, the over 11% of the days have rain. Those numbers represent a significant requirement for a UAV the solution.

With any UAVs, the ability to operate safely in wind is an impfortant selection criterion. Paris France has, on average, 44 days (>12%) each year where the wind is in excess of 34mph (55 km/hr). If an aerial vehicle can not operate in this type of condition, there would be a significant loss to operations. Even New York City averages winds greater than 19km/hr, so a system that cannot reliability operate in even moderate winds would have a negative impact on the usefulness of the product. A fact often overlooked is the wind speed at flying altitude – not just the average wind speed, but also the strength and severity of gusts. With buildings, trees and land formations often blocking or reducing the effect of wind near the ground, much higher winds are typically experienced by a UAV at even "low" altitudes.

Below are average wind plots for Canada. Over 50% of Canadian airspace has average winds greater than 25 km/h at 80 m, a typical operating altitude for a small UAV.



click to enlarge

Flight Time

Most vendors of small UAVs advertise similar length of flight time. However, it is important to read fine print. To boost their numbers, some vendors' advertised flight time is for the aerial vehicle without a payload (camera) and under ideal conditions (e.g. no wind, at 20°C). When a payload is attached the useful operational the flight time can be reduced by over 50%.

While the length of flight for small UAVs is still shorter than most organizations feel they need, when actually trying a UAV,



many people are surprised by the amount of information that can be gathered in just 20 minutes. Often organizations incorrectly base their assumptions around how long it currently takes to get the information. With many systems, data is only stored on-board the craft and cannot be accessed until the vehicle lands - this can negate the value of long flight times, as the longer a vehicle is flying, the longer the delay to access the imagery.
An additional solution, to delivering longer mission times or providing continuous surveillance is the use of multiple vehicles. Advanced UAV systems allow multiple vehicles to be in the air under the control of a single user, providing a persistent stare by having a 2nd aerial vehicle take over surveillance while the 1st vehicle returns for a new battery.

Safety

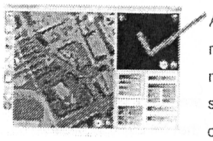
Safety is always a focus of any law enforcement organization. Safety of officers and civilians, as well as property must be considered for all equipment used. It is important the UAV system has been designed with safety as a priority, not added on after the fact.

Features that support safe operation can include:

The ability of the system to **know when the power source is running low,** inform the pilot, and if necessary fly home.
Reporting when **wind speed** is excessive and the vehicle should return to the ground or the ability to set user imposed **max range fencing** in which the vehicle is allowed to fly. This reduces the pressure the pilot may feel to fly when he/she is unsure of the safety of the conditions.
Not permitting the vehicle to fly if any of the onboard systems had detected a fault.
Intelligent response if communication is lost between the aerial vehicle and the operator.
Having safety built into the system allows the operator to focus on the job of collecting the information at the scene.

Cost

With any major equipment purchase, the purchase price is only a part of the real cost to the organization; others include **training**, **re-training**, **skills practise**, **maintenance**, **repair** and **new features**.



A simple touch screen interface requires orders of magnitude less **training** than an RC controller. The training cost saving resulting from selecting a system that is designed for ease-of-use versus an RC controlled system is over 75%. If equipment is not used continually it is imperative that the interface is easy to remember. If not, there will be lost opportunities as well as significant **re- training** and testing. In an emergency, pilots can feel a great deal of pressure to fly despite being out of practice or in situations beyond their skill level.



Maintenance costs need to be included in the decision process as these can have a significant impact on tight budgets. A modular system that has been design to eliminate the need for maintenance reduces the both the direct costs of doing the work and the indirect cost of not having the equipment available during the maintenance time.

Any system will at some time require **repairs**. For a uni-body designed system the whole unit is returned when repair work needs to be performed. Modular systems require that only the failure part need be returned for repair or replaced with a new part which can be kept in stock.

New **features and payloads** are always being developed by manufacturers. It is important to ensure a system purchased today will work with new features or payloads. Predicting the future of any product is difficult, but one of the keys to reducing your risk is to check to see that currently existing payloads are easily interchanged and make sure the system is designed to *allow the user to upgrade* without having to return the unit to the factory.

Single User Operation

Many systems are designed in a way that requires more than one operator. A system designed for single operator use gets the job done faster, more reliably and at a lower cost. It must providing the operator with all of the flight and payload controls, along with a display of the visual data being collected. A system can only be truly a single operator design when the system manages the vehicle's flight, letting the **user focus on where to fly, not how**.

Network Ready

While a single UAV streaming images to the ground works well for standalone missions, the ability to distribute the information to a command center or other decision makers is what allows an organization to really get the most from the investment. Systems that do not provide this ability will be left behind when they could be most useful.

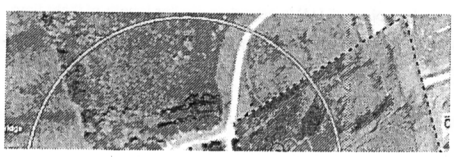


Quick Change

Most UAV systems offer multiple payload options, often cameras. Changing from one payload to another needs to be seamless to the operator. The requirements of an operation can change quickly and the equipment being used must be able to keep up. Ensure the system allows not only a quick physical change in all weather conditions, but also ensures the electronics and software recognizes the change automatically. Without the ability to quickly adapt to the needs of the operation, valuable time will be lost setting up the system after each change.

More than Pictures

There are two basic UAV designs on the market today: the first has a commercial camera attached to the bottom of an aerial platform; the second is a UAV system that has custom cameras integrated in the system. While the first type of system may allow for a choice of cameras, the only information provided is imagery. A system with an integrated camera allows for metadata to be tagged with the picture or video stream.



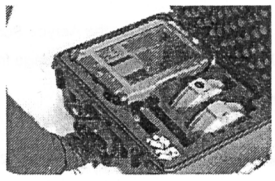
Geographical metadata allows images to be stitched together into larger picture of the area without having to give up any detail. More advanced systems can also use this information for immediate use in the navigation of the system, by providing current maps of the surroundings.

Vertical Take Off and Landing (VTOL)

UAVs are divided into two categories, Vertical Take Off and Landing (VTOL) or Fixed Wing. Each performs different tasks. While fixed wing system can fly for longer distances and duration, they require space for take-off and landing and must keep moving, unable hover over a location. VTOL systems require limited space for take off and landing, some as little as 5 m^2, while providing improved control of take off and landings. They can hover in place, providing constant surveillance of any location.

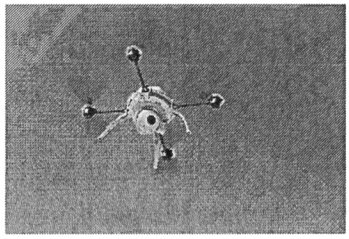
Portability

It is important to ensure the system packaging is portable and includes everything required to carry out a successful mission. If you can't easily carry the equipment required to perform the required tasks, the UAV will be relegated to being used only for special operations. Look for systems designed to be carried in the back of any vehicle, that can be managed by a single operator, and with kits that contain everything needed to complete a successful operation.



Available Solutions

While there are many needs that must be met to make any small UAV ready for police work, there are very few systems on the market that meet all the requirements listed above - however, one system that does is the **Aeryon Scout**.



Operational Conditions

The Aeryon Scout has been designed to operate in all types of weather. From a bright sunny day through cold (-10°C) to hot (50°C), from calm winds to strong breeze (50km/hr) with the ability to handle gust up to Gale (80km/hr) the Scout will provide high quality aerial information.

Length of Flight Time

The Aeryon Scouts listed flight time of up to 25 minutes is measured with a camera payload attached. Changing the battery takes less than 10 seconds. Unlike most other systems, high resolution imagery and other **on-board data can be accessed online** while the vehicle is in flight.

To provide extended surveillance, the Scout system can manage more than one flyer allowing for persistent surveillance. In addition, the Scout system is provided with a battery charger that allows the user to charge 3 batteries simultaneously in the field from a variety of sources.

Safety

The Aeryon Scout provides multiple safety features, including simply returning home and landing safely when battery is low, keeping the vehicle within a specified distance of the operator, and to the detection of sever wind conditions and responding appropriately.

Cost

Training

Training is easy with the Aeryon Scout. With a touch screen interface, the operator simply directs the vehicle to the desired location and points the camera where needed, while the vehicle manages the difficult aspects of flying. In addition, a built in simulator allows personnel to learn to operate the system from the office as time permits.

Maintenance

To keep operations moving, if any part should be need to be repaired, simply snap in the spare and return the system to immediate operation. No tools are required in the field, enabling the system to be put into service within a few minutes of arriving at the scene.

Single User Operation

With the comprehensive touch screen interface and on-board system management software, the Aeryon scout is designed for a single user operation

Network Ready

The Aeryon Scout was designed so that it can be integrated into an existing network. The video data provided is digital throughout the system.

Quick Change

All payloads designed for the Aeryon Scout to be changed in operation, with the system automatically recognizing the payload attached and adjusting the system as needed. Changing from a daylight to thermal payload takes less than a minute and can be done in any weather.

More than Pictures

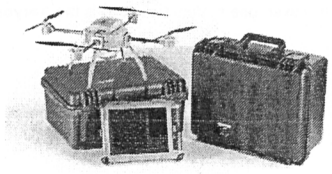
All photographs taken by the Aeryon Scout are geotagged, ensuring all information required for evidence processing is retained. In addition, the images can be stitched together to provide a large area image from several smaller ones.

VTOL

The Aeryon Scout needs an area of $5m^2$ around the aerial vehicle for take off and landing.

Portability

Designed to fit into two carrying cases that fit into any vehicle and are small enough to be carried on commercial airlines, the Aeryon Scout comes complete with everything need to provide coverage for the variety of missions that it may need to carry out.



Saunders, Jim [DPS]

From: Feddersen, Paul [DPS]
Sent: Tuesday, January 29, 2013 8:49 PM
To: Saunders, Jim [DPS]
Subject: Fw: Fwd: Forums: New Thread Law Enforcement Drone

Paul F. Feddersen
State LEIN Coordinator
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 E 7th Street
Des Moines, IA 50319
Office: (515) 725-6307
Fax: (515) 725-6320
Cell: (515) 202-3720
fedderse@dps.state.ia.us
pfeddersen@mocic.riss.net
NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

From: Northway, Kerry [DPS]
Sent: Tuesday, January 29, 2013 08:39 PM
To: Feddersen, Paul [DPS]; Noelck, Christopher [DPS]
Subject: Fwd: Forums: New Thread Law Enforcement Drone

FYI, thought you would like to see this.

Kerry

:

> **From:** <admin@natia.org>
> **Date:** January 28, 2013, 4:10:32 PM CST
> **To:** "Northway, Kerry [DPS]" <northway@dps.state.ia.us>
> **Subject: Forums: New Thread Law Enforcement Drone**
>
> New thread has been posted to forum Forums, thread Law Enforcement Drone by TArney on 01/28/2013 at 4:06PM.
>
> Message: The Nebraska Legislature is considering a bill which would ban the use of all drone technology with the state.

I have been asked to propose some specific law enforcement related scenarios/exemption examples for the purposes of submitting ammendments to the bill.

Has anyone dealt with this issue within your own jurisdictions?

I am looking for any suggestions for uses that would be "outside-the-box" proposals away from the tactical and surveillance purposes in which everyone expects their use.

Does current technology enable use of these types of vehicles in weather not typically suited for manned craft, say in missing child/vulnerable adult cases or . . .?

Any scenario suggestions are welcome.

To view the thread go to http://www.natia.org/i4a/bb/index.cfm?page=topic&topicID=901.

Please note, this is an automated email. Do not reply to this email.

Saunders, Jim [DPS]

From: London, Brian [DPS]
Sent: Thursday, December 13, 2012 7:47 PM
To: Ponsetto, Steve [DPS]
Cc: DPS - director; Noelck Christopher
Subject: Re: Fwd: Aerial Drone Aided in October Chemical Train Derailment Response

Good article.
Thanks
Brian

Sent from my Verizon Wireless 4G LTE DROID

"Ponsetto, Steve [DPS]" <ponsetto@dps.state.ia.us> wrote:

Thanks Ray - All:

This is a story from Ky reference a train derailment and the use of a drone. The article appears to identify a specific type of drone and the company that manufactures it.

I tried to include those that I thought had an interest in looking into these devices. Please pass along if I have missed someone.

Thanks Steve
Sent from my iPad

Begin forwarded message:

> **From:** "Reynolds, Ray [DPS]" <rreynold@dps.state.ia.us>
> **Date:** December 13, 2012 6:16:13 PM CST
> **To:** "Ponsetto, Steve [DPS]" <ponsetto@dps.state.ia.us>
> **Subject: FW: Aerial Drone Aided in October Chemical Train Derailment Response**

From: tim.butters@dot.gov [mailto:tim.butters@dot.gov]
Sent: Thursday, December 13, 2012 5:06 PM
Subject: Aerial Drone Aided in October Chemical Train Derailment Response

FYI

Aerial Drone Aided in October Chemical Train Derailment Response

Link to article in *Government Technology*:

http://www.govtech.com/public-safety/Aerial-Drone-Aids-in-Chemical-Train-Derailment-Response.html

Timothy P. Butters

Deputy Administrator

Pipeline and Hazardous Materials Safety Administration

U.S. Department of Transportation

202-366-4461

twitter.com/phmsa_dot

Google Desktop

Web Images Groups News Shopping Maps Scholar **Desktop** more »

drone Search Desktop Preferences Advanced Search

Cached messages

Message **1** of **1** in conversation

Reply | Reply to all | Forward | View in Outlook

For Your Drone X-Files

From: Quinn, JohnF [DPS] <jquinn@dps.state.ia.us>
To: Saunders, Jim [DPS] <saunders@dps.state.ia.us>
Date: Nov 28 2012 - 9:27am

ravenrq11bweb_0.jpg - 3.8k
share_save_171_16.png - 1.5k
forward.gif - 450b
print_icon.gif - 1007b
avw.php?zoneid=41&cb=INSERT_RANDOM_NUMBER_HERE&n=a8168a33 - 133b
avw.php?zoneid=46&cb=INSERT_RANDOM_NUMBER_HERE&n=aa17b4bd - 133b
avw.php?zoneid=48&cb=INSERT_RANDOM_NUMBER_HERE&n=a3751685 - 133b
m?ci=us-bpaww&cg=0&cc=1 - 134b - View in Outlook

HYPERLINK "http://www.gsnmagazine.com/aboutgsn"About GSN
HYPERLINK "http://www.gsnmagazine.com/advertise"Advertise
HYPERLINK "http://www.gsnmagazine.com/subscribe"Subscribe
HYPERLINK "http://www.gsnmagazine.com/rss.xml"RSS
HYPERLINK "http://www.gsnmagazine.com/contactus"Contact Us

HYPERLINK "http://www.gsnmagazine.com/user/register"Register | HYPERLINK "http://www.gsnmagazine.com/user/login"Login

HYPERLINK "http://www.gsnmagazine.com/"Home
HYPERLINK "http://www.gsnmagazine.com/technology_sectors"Technology Sectors

HYPERLINK "http://www.gsnmagazine.com/technology_sectors/access_control_identification"Access Control | Identification
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/cbrne_detection"CBRNE | Detection
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/communications"Communications

HYPERLINK "http://www.gsnmagazine.com/technology_sectors/cyber_security"Cyber Security
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/disaster_preparedness_emergency_response"Disaster Preparedness | Emergency Response
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/education_training"Education | Training
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/it_security"IT Security
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/perimeter_protection"Perimeter Protection
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/video_surveillance_cctv"Video Surveillance | CCTV

HYPERLINK "http://www.gsnmagazine.com/market_sectors"Market Sectors

HYPERLINK "http://www.gsnmagazine.com/market_sectors/airport_aviation_security"Airport | Aviation Security
HYPERLINK "http://www.gsnmagazine.com/market_sectors/border_security"Border Security
HYPERLINK "http://www.gsnmagazine.com/market_sectors/federal_agencies_legislative"Federal | Agencies | Legislative
HYPERLINK "http://www.gsnmagazine.com/market_sectors/infrastructure_protection"Infrastructure Protection
HYPERLINK "http://www.gsnmagazine.com/market_sectors/law_enforcement_first_responders"Law Enforcement | First Responders
HYPERLINK "http://www.gsnmagazine.com/market_sectors/maritime_port_security"Maritime | Port Security
HYPERLINK "http://www.gsnmagazine.com/market_sectors/military_force_protection"Military | Force Protection
HYPERLINK "http://www.gsnmagazine.com/market_sectors/state_local_security"State | Local Security
HYPERLINK

"http://www.gsnmagazine.com/market_sectors/security_services"Security Services

HYPERLINK "http://www.gsn-buyersguide.com/"Buyer's Guide
HYPERLINK "http://www.gsnmagazine.com/backissuesprint"Back Issues
HYPERLINK "http://www.gsnmagazine.com/videocenter"Videos
HYPERLINK "http://www.gsnmagazine.com/events"Calendar

HYPERLINK "http://www.gsnmagazine.com/events/submit_an_event"Submit an Event

HYPERLINK "http://www.gsnmagazine.com/whitepapers"White papers

Technology Sectors

HYPERLINK "http://www.gsnmagazine.com/technology_sectors/access_control_identification"Access Control | Identification
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/cbrne_detection"CBRNE | Detection
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/communications"Communications

HYPERLINK "http://www.gsnmagazine.com/technology_sectors/cyber_security"Cyber Security
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/disaster_preparedness_emergency_response"Disaster Preparedness | Emergency Response
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/education_training"Education | Training
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/it_security"IT Security
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/perimeter_protection"Perimeter Protection
HYPERLINK "http://www.gsnmagazine.com/technology_sectors/video_surveillance_cctv"Video Surveillance | CCTV

Market Sectors

HYPERLINK "http://www.gsnmagazine.com/market_sectors/airport_aviation_security"Airport | Aviation Security
HYPERLINK "http://www.gsnmagazine.com/market_sectors/border_security"Border Security
HYPERLINK "http://www.gsnmagazine.com/market_sectors/federal_agencies_legislative"Federal | Agencies | Legislative
HYPERLINK "http://www.gsnmagazine.com/market_sectors/infrastructure_protection"Infrastructure Protection
HYPERLINK "http://www.gsnmagazine.com/market_sectors/law_enforcement_first_responders"Law Enforcement | First Responders
HYPERLINK "http://www.gsnmagazine.com/market_sectors/maritime_port_security"Maritime | Port Security
HYPERLINK "http://www.gsnmagazine.com/market_sectors/military_force_protection"Military | Force Protection
HYPERLINK "http://www.gsnmagazine.com/market_sectors/state_local_security"State | Local

Security
HYPERLINK
"http://www.gsnmagazine.com/market_sectors/security_services"Security Services

Oklahoma SUAS tests incorporate privacy protections

Mon, 2012-11-26 10:36 AM
By: HYPERLINK "http://www.gsnmagazine.com/author/21449/mark_rockwell"Mark Rockwell

SUAS

To bolster privacy protections, the Department of Homeland Security's tests of small unmanned aircraft systems (SUAS) at Ft. Sill in Oklahoma uses test subjects and specific sites for initial photographic and monitoring capabilities and other techniques, according to the agency.

A HYPERLINK
"http://www.dhs.gov/sites/default/files/publications/privacy/PIAs/privacy_pia_st_raps_nov2012.pdf"privacy assessment of DHS' Department of Homeland Security Science and Technology Directorate's test site for the department's Robotic Aircraft for Public Safety (RAPS) Program shows the systems being tested can take snapshots or still images by using screenshots of full motion surveillance video.

Those capabilities have raised some concerns among privacy rights advocates.

The testing program in Oklahoma is aimed at providing support to emergency responders in wildfires, floods and other natural disaster situations. Oklahoma was HYPERLINK
"http://www.gsnmagazine.com/../article/26727/oklahoma_official_dhs_test_site_drone_tech"designated as the test site for the RAPS program in 2010.

A privacy impact assessment issued by DHS on November 16 provides additional details of the RAPS work and precautions the program has in place to protect the privacy people on the base and in surrounding areas.

The SUAS being tested at the facility include small aircraft, usually weighing 55 pounds or less, said the assessment. The aircraft can be programmed to fly on a prescribed flight path or manually controlled from the ground control station by the operators.

The vehicles are equipped with sensors and cameras that can capture images and transmit them to the ground control system (GCS) to provide aerial views of emergency situations and situational awareness. They are also programmed to be automatically turned off or to return to the point of lost communications connections, it said. Data collection and transmission continues as long as the connection to the GCS is active, though some systems have the ability to store data on the aircraft itself, it said.

The systems tested in the RAPS program vary in size of the aircraft and camera resolution depending on the model of the aircraft and needs of the potential operational user. Some systems can take snapshots or still images by using screenshots of full motion surveillance video. Most systems include a date and time stamp on the footage captured and the cameras can capture latitudinal and longitudinal coordinates if needed.

According to the assessment, any data that contains imagery not related to the test activities -- like non-volunteers or areas outside the testing perimeter -- are deleted and are not used for the project. The images taken are not matched in any databases. The systems being tested are not capable of performing facial recognition.

Although the initial testing is being conducted at the Fort Sill U.S. Army post in Oklahoma, other U.S. military facilities may also be used for testing, said DHS. The SUAS test flights are limited to restricted airspace where tests and drills are already conducted -- like firing ranges. The SUAS, said the assessment, don't fly over or capture images of the living quarters, shopping areas, or any other public spaces at

Fort Sill. All test volunteers receive notice and provide consent prior to participating in the tests; no members of the public are affected by these tests, it said.

Research participants volunteer to participate in the tests conducted at Fort Sill, it said and the RAPS team provides notice and obtains informed consent from the volunteers prior to the start of the study. By participating in the tests, volunteers understand that the SUAS can capture and transmit their images to the ground control system, it explained. If a SUAS incidentally capture images of private citizens or property, the images are immediately deleted by the RAPS team, in accordance with program protocol, it said.

Prior to their participation, volunteers receive notice about the tests and provide informed consent, it said. The images captured during the tests are only used to evaluate the effectiveness of the SUAS. The images of volunteers may also be used in reports or presentations to demonstrate the SUAS capability. The images are not matched in any databases, used, or shared for any other purposes. The results of the SUAS tests are compiled into a final report, which may be distributed to the emergency responder community and used to support acquisition or purchasing decisions, said DHS.

Tags:

HYPERLINK "http://www.gsnmagazine.com/category/article_locations/homepage"Homepage
HYPERLINK "http://www.gsnmagazine.com/category/article_locations/market_sectors"Market Sectors
HYPERLINK "http://www.gsnmagazine.com/category/article_locations/technology_sectors"Technology Sectors
HYPERLINK "http://www.gsnmagazine.com/category/article_type/todays_news"Today's News
HYPERLINK "http://www.gsnmagazine.com/category/market_sectors/border_security"Border Security
HYPERLINK "http://www.gsnmagazine.com/category/market_sectors/federal_agencies_legislative"Federal | Agencies | Legislative
HYPERLINK "http://www.gsnmagazine.com/category/market_sectors/law_enforcement_first_responders"Law Enforcement | First Responders
HYPERLINK "http://www.gsnmagazine.com/category/technology_sectors/disaster_preparedness_emergency_response"Disaster Preparedness | Emergency Response

HYPERLINK "http://www.addtoany.com/share_save?linkurl=http%3A%2F%2Fwww.gsnmagazine.com%2Farticle%2F27891%2Foklahoma_suas_tests_incorporate_privacy_protection&linkname=Oklahoma%20SUAS%20tests%20incorporate%20privacy%20protections"
HYPERLINK "http://www.gsnmagazine.com/forward?path=node%2F27891"
HYPERLINK "http://www.gsnmagazine.com/print/27891?c=law_enforcement_first_responders"

HYPERLINK "http://gsnmagazine.disqus.com/?url=http%3A%2F%2Fwww.gsnmagazine.com%2Fnode%2F27891"View the discussion thread.

HYPERLINK "http://www.gsnmagazine.com/openx/www/delivery/ck.php?n=a8168a33&cb=INSERT_RANDOM_NUMBER_HERE" \n
HYPERLINK "http://www.gsnmagazine.com/openx/www/delivery/ck.php?n=aa17b4bd&cb=INSERT_RANDOM_NUMBER_HERE" \n
HYPERLINK "http://www.gsnmagazine.com/openx/www/delivery/ck.php?n=a3751685&cb=INSERT_RANDOM_NUMBER_HERE" \n

Upcoming Events

Event Details Dates of Event
HYPERLINK

"http://www.gsnmagazine.com/events/25446/sans_sydney_2012"SANS Sydney 2012 Nov 12 - 20
HYPERLINK "http://www.gsnmagazine.com/events/27340/sans_london_2012"SANS London 2012 Nov 26 - Dec 3
HYPERLINK "http://www.gsnmagazine.com/events/27341/sans_san_antonio_2012"SANS San Antonio 2012 Nov 27 - Dec 2
HYPERLINK "http://www.gsnmagazine.com/events/26383/executive_protection"Executive Protection Dec 3 - 4
HYPERLINK "http://www.gsnmagazine.com/events/27342/eu_scada_process_summit_2012"EU SCADA & Process Summit 2012 Dec 5 - 11
HYPERLINK "http://www.gsnmagazine.com/events/27343/sans_cyber_defense_initiative_2012"SANS Cyber Defense Initiative 2012 Dec 7 - 16
HYPERLINK "http://www.gsnmagazine.com/events/27811/mobile_device_security_summit_2013"Mobile Device Security Summit 2013 Jan 7 - 14
HYPERLINK "http://www.gsnmagazine.com/events/27812/virtualization_and_cloud_summit_2013"Virtualization and Cloud Summit 2013 Jan 7 - 14
HYPERLINK "http://www.gsnmagazine.com/events/27813/sans_security_east_2013"SANS Security East 2013 Jan 16 - 21
HYPERLINK "http://www.gsnmagazine.com/events/27776/counter_ied_training_forum"Counter IED Training Forum Jan 28 - 30
HYPERLINK "http://www.gsnmagazine.com/events/27777/biometrics_national_security_and_law_enforcement"Biometrics for National Security and Law Enforcement Jan 30 - Feb 1
HYPERLINK "http://www.gsnmagazine.com/events/27778/big_data_defense_government"Big Data for Defense & Government Feb 25 - 27
HYPERLINK "http://www.gsnmagazine.com/events/26356/aerospace_exchange_asx_2013"AeroSpace eXchange (ASX) 2013 Feb 27 - Mar 1
HYPERLINK "http://www.gsnmagazine.com/events/27563/meritalk_data_center_brainstorm"MeriTalk Data Center Brainstorm Mar 7 - 7
HYPERLINK "http://www.gsnmagazine.com/events/26979/border_securty_expo_2013"Border Securty Expo 2013 Mar 12 - 13
HYPERLINK "http://www.gsnmagazine.com/events/27749/2013_sia_government_summit"2013 SIA Government Summit Jun 4 - 5

HYPERLINK "http://www.gsnmagazine.com/events"Full 2012 Calendar

HYPERLINK "http://www.gsnmagazine.com/aboutgsn"About GSN
HYPERLINK "http://www.gsnmagazine.com/advertise"Advertise
HYPERLINK "http://www.gsnmagazine.com/subscribe"Subscribe
HYPERLINK "http://www.gsnmagazine.com/rss.xml"RSS
HYPERLINK "http://www.gsnmagazine.com/contactus"Contact Us

HYPERLINK "http://www.gsnmagazine.com/"Home
HYPERLINK "http://www.gsnmagazine.com/technology_sectors"Technology Sectors

HYPERLINK "http://www.gsnmagazine.com/market_sectors"Market Sectors
HYPERLINK "http://www.gsn-buyersguide.com/"Buyer's Guide
HYPERLINK "http://www.gsnmagazine.com/backissuesprint"Back Issues
HYPERLINK "http://www.gsnmagazine.com/videocenter"Videos
HYPERLINK "http://www.gsnmagazine.com/events"Calendar
HYPERLINK "http://www.gsnmagazine.com/whitepapers"White papers

GSN: Government Security News, 4770 Sunrise Highway, Suite 105, Massapequa

Park, NY 11762 Phone: 212-344-0759
All content copyright © 2012 World Business Media, LLC. All rights reserved.
HYPERLINK "http://www.gsnmagazine.com/page/privacy_policy"Privacy Policy |
HYPERLINK "http://www.gsnmagazine.com/page/legal"Legal Information

Reply | Reply to all | Forward | View in Outlook

drone Search

Google Desktop Home - Browse Timeline - Index Status - Privacy - About - ©2009 Google

Saunders, Jim [DPS]

From: London, Brian [DPS]
Sent: Sunday, November 18, 2012 7:23 AM
To: Saunders, Jim [DPS]
Cc: London, Brian [DPS]; Ponsetto, Steve [DPS]
Subject: RE:

i think this is an earlier version of what's available now. ...but similar...the new one looks different and is HD.

Sent from my Verizon Wireless 4G LTE DROID

"Saunders, Jim [DPS]" <saunders@dps.state.ia.us> wrote:

Here is a link to the device. Includes specs and a video.

http://www.verizonwireless.com/parrot-drone-2.shtml

JIM

James J. Saunders,
Assistant Director
Investigative Operations
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th Street, Des Moines, IA 50319-0049
Phone: 515-725-6310 Fax: 515-725-6320
Direct: 515-725-6305 Cell: 515-971-6106
E-mail: saunders@dps.state.ia.us
Secure E-mail: jsaunders@mocic.riss.net

NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

-----Original Message-----
From: London, Brian [DPS]
Sent: Sat 11/17/2012 10:16 AM
To: Ponsetto, Steve [DPS]; Saunders, Jim [DPS]
Subject:

Jim

I was at a Verizon store and saw they are selling drones. They cost 300 dollars.

Please have someone look into these. They have a flight time of 30 minutes and HD video camera that show real time video with storage of 32GB.

These might be worth testing.

Let me know...Id certainly like one for Xmass personally.

It is a cheap mans drone but might just get us what we need and can afford.

Brian

Sent from my Verizon Wireless 4G LTE DROID

Saunders, Jim [DPS]

From: Saunders, Jim [DPS]
Sent: Friday, November 16, 2012 8:45 AM
To: Quinn, JohnF [DPS]
Subject: RE: Info for your drone search

Thanks John.....

James J. Saunders, Director
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th Street, Des Moines, IA 50319-0049
Phone: 515-725-6310 Fax: 515-725-6320
Direct: 515-725-6305 Cell: 515-971-6106
E-mail: saunders@dps.state.ia.us
Secure E-mail: jsaunders@mocic.riss.net

NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

From: Quinn, JohnF [DPS]
Sent: Friday, November 16, 2012 7:59 AM
To: Saunders, Jim [DPS]
Subject: Info for your drone search

- About GSN
- Advertise
- Subscribe
- RSS
- Contact Us

Register | Login

Search...

Subscribe to our free e-newsletter

Home
Technology Sectors
- **Access Control | Identification**
- **CBRNE | Detection**
- **Communications**
- **Cyber Security**
- **Disaster Preparedness | Emergency Response**
- **Education | Training**
- **IT Security**
- **Perimeter Protection**
- **Video Surveillance | CCTV**

Market Sectors
- **Airport | Aviation Security**
- **Border Security**
- **Federal | Agencies | Legislative**
- **Infrastructure Protection**
- **Law Enforcement | First Responders**

Technology Sectors

Access Control | Identification
CBRNE | Detection
Communications
Cyber Security
Disaster Preparedness | Emergency Response
Education | Training
IT Security
Perimeter Protection
Video Surveillance | CCTV

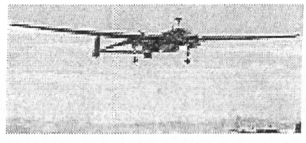
Market Sectors

Airport | Aviation Security
Border Security
Federal | Agencies | Legislative
Infrastructure Protection
Law Enforcement | First Responders
Maritime | Port Security
Military | Force Protection
State | Local Security
Security Services

Raytheon and Air Force testing UAS/air traffic control systems

Thu, 2012-11-15 02:26 PM
By: Mark Rockwell

The U.S. Air Force and Raytheon said on Nov. 15 they conducted concept evaluation demonstrations that showed existing air traffic control equipment could be modified to safely track the presence of nearby unmanned aircraft.



The U.S. Government is preparing to allow unmanned aerial systems (UAS) in the National Airspace System by 2015.

Ground Based Sense and Avoid (GBSAA) -- based on the Airport Surveillance Radar Model-11 (ASR-11) and the repurposed Standard Terminal Automation Replacement System (STARS) air traffic control system -- reduces the need for costly new infrastructure, said Raytheon in a Nov. 15 statement.

The testing near Edwards Air Force Base at Gray Butte Airfield in California involved a moving "dynamic protection zone" -- a collision avoidance alerting capability -- around the UAS, said the company. The "dynamic protection zone" provides a series of alerts to the UAS pilot as airborne objects (like balloons or ultra-lights) approach to avoid near mid-air collisions. GBSAA also builds on wind farm mitigation technology used to mitigate interference from wind turbines near airports, it said.

Using Raytheon's ASR-11, the STARS automation system, and its surveillance data processor, repurposed for GBSAA, pilots and controllers were given alerts of intruding airborne objects near surrogate unmanned aerial systems and were able to keep them safely separated, the company said.

ASR-11, the STARS system and its surveillance data processor are proven, NAS-certified systems for use in safely separating aircraft today, according to Raytheon. The company contends that repurposing those assets provides a cost-effective approach that enables safe UAS flight in the NAS.

"Our solution provides the Federal Aviation Administration and the Department of Defense with a cost-effective and safe approach to handle the thousands of unmanned aerial systems that'll be flying in our airspace in the next few years," said Joseph Paone, director of Air Traffic Management for Raytheon's Network Centric Systems business.

"Our system properly notifies controllers and pilots of intrusions and accurately shows aircraft altitude, which is important in keeping commercial aircraft, unmanned aerial systems and other hazards safely separated," he added.

Leveraging the existing NAS-certified installed-base of ASR-11 and STARS systems, Raytheon said it would continue testing GBSAA with the U.S. Air Force at other sites across the country.

Tags:

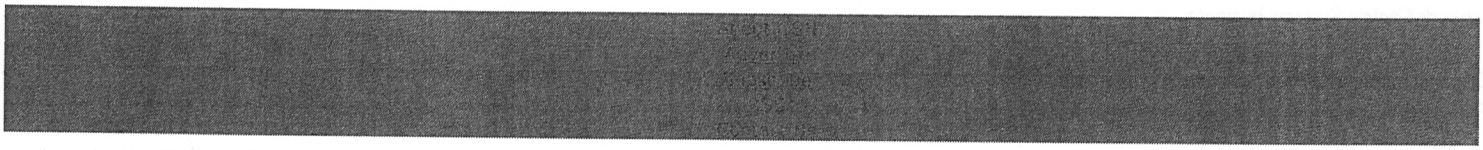
Homepage
Market Sectors
Technology Sectors
Company News
Airport | Aviation Security
Border Security
Federal | Agencies | Legislative
Infrastructure Protection
Communications

Share / Save

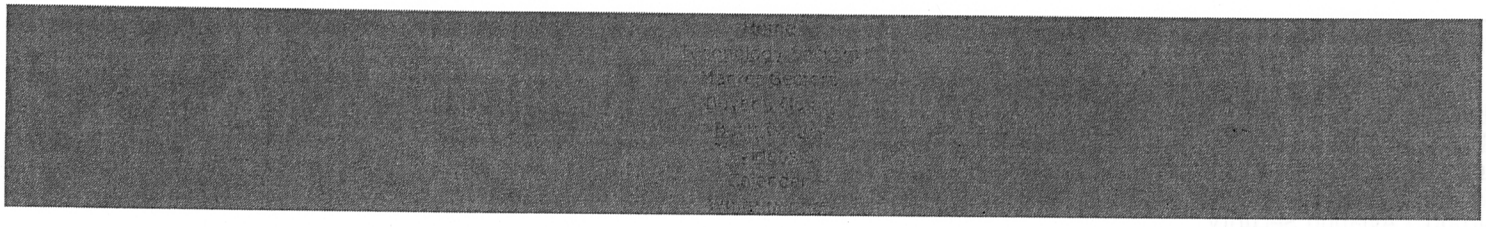
View the discussion thread.

Upcoming Events

Event Details	Dates of Event
SANS San Diego 2012	Nov 12 - 17
SANS Sydney 2012	Nov 12 - 20
SANS London 2012	Nov 26 - Dec 3
SANS San Antonio 2012	Nov 27 - Dec 2
Executive Protection	Dec 3 - 4
EU SCADA & Process Summit 2012	Dec 5 - 11
SANS Cyber Defense Initiative 2012	Dec 7 - 16
Mobile Device Security Summit 2013	Jan 7 - 14
Virtualization and Cloud Summit 2013	Jan 7 - 14
SANS Security East 2013	Jan 16 - 21
Counter IED Training Forum	Jan 28 - 30
Biometrics for National Security and Law Enforcement	Jan 30 - Feb 1
Big Data for Defense & Government	Feb 25 - 27
AeroSpace eXchange (ASX) 2013	Feb 27 - Mar 1
MeriTalk Data Center Brainstorm	Mar 7 - 7
Border Securty Expo 2013	Mar 12 - 13
2013 SIA Government Summit	Jun 4 - 5







GSN: Government Security News, 4770 Sunrise Highway. Suite 105, Massapequa Park. NY 11762 Phone: 212-344-0759
All content copyright © 2012 World Business Media, LLC. All rights reserved.

Privacy Policy | Legal Information

Saunders, Jim [DPS]

From: Noelck, Christopher [DPS]
Sent: Thursday, November 15, 2012 1:41 PM
To: Saunders, Jim [DPS]
Subject: Re: RE: RE:

Will do.

SA C. J. Noelck
DPS - Division of Intelligence
noelck@dps.state.ia.us
Cell: 712-250-0116

On Nov 15, 2012, at 1:39 PM, "Saunders, Jim [DPS]" <saunders@dps.state.ia.us> wrote:

> Thanks CJ. Can you find out what the criteria is for use of the FBI drone?
>
> Thanks
>
> **James J. Saunders, Director**
> Division of Intelligence and Fusion Center
> Iowa Department of Public Safety
> 215 East 7th Street, Des Moines, IA 50319-0049
> Phone: 515-725-6310 Fax: 515-725-6320
> Direct: 515-725-6305 Cell: 515-971-6106
> E-mail: saunders@dps.state.ia.us
> Secure E-mail: jsaunders@mocic.riss.net
>
> *NOTICE* This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.
>
> ---
>
> **From:** Noelck, Christopher [DPS]
> **Sent:** Thursday, November 15, 2012 11:32 AM
> **To:** Saunders, Jim [DPS]
> **Subject:** Re: RE:
>
> I talked to a couple of more contacts and the military contact Brad Nolan talked to advised that they do have a drone in Cedar Rapids and Des Moines, but they can only fly them on Military owned land for military operations. They are not available to LE. FAA has not given them the OK to fly anywhere else in the US. They have been in talks with FAA since 2009.
>
> I made a call to Mitch Moe who is the tech supervisor for FBI out of Omaha. They do have Drones at Quanico that could be here in a day. He is going to call Quanico to give me a contact of the company they are using so I can talk with them. Mitch advised the ones they have are around $200,000.
>
> Still digging, I'll keep you posted.
>
> SA C. J. Noelck
> DPS - Division of Intelligence

noelck@dps.state.ia.us
Cell: 712-250-0116

On Nov 15, 2012, at 9:26 AM, "Saunders, Jim [DPS]" <saunders@dps.state.ia.us> wrote:

Sir,

An interesting white paper on the topic I thought you might find interesting.

Jim

Considerations in Selecting a Small UAV for Police Operations

- <image001.png>

<image002.jpg>Small, or micro, Unmanned Aerial Vehicles (UAVs) or Unmanned Aerial Systems (UAS) are quickly entering the market for practical use in law enforcement, choosing the right solution can appear daunting. With equipment purchases typically between 15 and 5 percent of total budgets, making the right decision is essential.

How do you now which system provides the best solution for your needs?

First it is important to define what your needs are. Policing organizations are constantly being asked to do more with greater financial constraints. Therefore the solution needs to be able to support multiple situations such as:

- Accident Investigation
- Search and Rescue
- Drug Plantation Investigations
- Disaster Management
- Crowd Control
- Explosive Ordinance Disposal
- Hostage and Barricade Situations
- CBRNE Incident
- Covert Tactical Surveillance
- Forensic Scenes
- Support for Arrest Warrants
- Gunfire Rescue of officers and citizens
- VIP Security support
- Perimeter security

First we will review the requirements that law enforcement need to evaluate when selecting a small unmanned aerial system, followed by reviewing a system that meets these needs.

Needs

The need for police organizations is to provide immediate aerial intelligence while ensuring the safety of police personnel, civilians and property. There are many ways this need can be met. Each has different costs and requirements. For the purpose of this paper, the focus is on the criteria for the selection of a small UAV that be used to support police operations.

Operation Conditions

Crime and accidents don't only occur on calm, sunny days. Police must be ready to respond to an incident at any time, therefore the equipment they choose must be capable of use in a variety of weather conditions - from sunny warm days, through rain and snow, high temperatures and significant wind. For example, in Vancouver, Canada, 45% of the days have rain, even in Albuquerque, New Mexico USA, the over 11% of the days have rain. Those numbers represent a significant requirement for a UAV the solution.

With any UAVs, the ability to operate safely in wind is an impfortant selection criterion. Paris France has, on average, 44 days (>12%) each year where the wind is in excess of 34mph (55 km/hr). If an aerial vehicle can not operate in this type of condition, there would be a significant loss to operations. Even New York City averages winds greater than 19km/hr, so a system that cannot reliability operate in even moderate winds would have a negative impact on the usefulness of the product. A fact often overlooked is the wind speed at flying altitude – not just the average wind speed, but also the strength and severity of gusts. With buildings, trees and land formations often blocking or reducing the effect of wind near the ground, much higher winds are typically experienced by a UAV at even "low" altitudes.

Below are average wind plots for Canada. Over 50% of Canadian airspace has average winds greater than 25 km/h at 80 m, a typical operating altitude for a small UAV.

<image003.jpg><image004.jpg>

click to enlarge

Flight Time

Most vendors of small UAVs advertise similar length of flight time. However, it is important to read fine print. To boost their numbers, some vendors' advertised flight time is for the aerial vehicle without a payload (camera) and under ideal conditions (e.g. no wind, at 20°C). When a payload is attached the useful operational the flight time can be reduced by over 50%.

<image005.jpg>While the length of flight for small UAVs is still shorter than most organizations feel they need, when actually trying a UAV, many people are surprised by the amount of information that can be gathered in just 20 minutes. Often organizations incorrectly base their assumptions around how long it currently takes to get the information. With many systems, data is only stored on-board the craft and cannot be accessed until the vehicle lands - this can negate the value of long flight times, as the longer a vehicle is flying, the longer the delay to access the imagery.

An additional solution, to delivering longer mission times or providing continuous surveillance is the use of multiple vehicles. Advanced UAV systems allow multiple vehicles to be in the air under the control of a single user, providing a persistent stare by having a 2nd aerial vehicle take over surveillance while the 1st vehicle returns for a new battery.

Safety

Safety is always a focus of any law enforcement organization. Safety of officers and civilians, as well as property must be considered for all equipment used. It is important the UAV system has been designed with safety as a priority, not added on after the fact.

Features that support safe operation can include:

- The ability of the system to **know when the power source is running low,** inform the pilot, and if necessary fly home.
- Reporting when **wind speed** is excessive and the vehicle should return to the ground or the ability to set user imposed **max range fencing** in which the vehicle is allowed to fly. This reduces the pressure the pilot may feel to fly when he/she is unsure of the safety of the conditions.
- Not permitting the vehicle to fly if any of the onboard systems had detected a fault.
- Intelligent response if communication is lost between the aerial vehicle and the operator.

Having safety built into the system allows the operator to focus on the job of collecting the information at the scene.

Cost

With any major equipment purchase, the purchase price is only a part of the real cost to the organization; others include **training**, **re-training**, **skills practise, maintenance**, **repair** and **new features**.

<image006.jpg><image007.jpg>A simple touch screen interface requires orders of magnitude less **training** than an RC controller. The training cost saving resulting from selecting a system that is designed for ease-of-use versus an RC controlled system is over 75%. If equipment is not used continually it is imperative that the interface is easy to remember. If not, there will be lost opportunities as well as significant **re- training** and testing. In an emergency, pilots can feel a great deal of pressure to fly despite being out of practice or in situations beyond their skill level.

Maintenance costs need to be included in the decision process as these can have a significant impact on tight budgets. A modular system that has been design to eliminate the need for maintenance reduces the both the direct costs of doing the work and the indirect cost of not having the equipment available during the maintenance time.

Any system will at some time require **repairs**. For a uni-body designed system the whole unit is returned when repair work needs to be performed. Modular systems require that only the failure part need be returned for repair or replaced with a new part which can be kept in stock.

New features and payloads are always being developed by manufacturers. It is important to ensure a system purchased today will work with new features or payloads. Predicting the future of any product is difficult, but one of the keys to reducing your risk is to check to see that currently existing payloads are easily interchanged and make sure the system is designed to *allow the user to upgrade* without having to return the unit to the factory.

Single User Operation

Many systems are designed in a way that requires more than one operator. A system designed for single operator use gets the job done faster, more reliably and at a lower cost. It must providing the operator with all of the flight and payload controls, along with a display of the visual data being collected. A system can only be truly a single operator design when the system manages the vehicle's flight, letting the **user focus on where to fly, not how**.

Network Ready

<image008.jpg>While a single UAV streaming images to the ground works well for standalone missions, the ability to distribute the information to a command center or other decision makers is

what allows an organization to really get the most from the investment. Systems that do not provide this ability will be left behind when they could be most useful.

Quick Change

Most UAV systems offer multiple payload options, often cameras. Changing from one payload to another needs to be seamless to the operator. The requirements of an operation can change quickly and the equipment being used must be able to keep up. Ensure the system allows not only a quick physical change in all weather conditions, but also ensures the electronics and software recognizes the change automatically. Without the ability to quickly adapt to the needs of the operation, valuable time will be lost setting up the system after each change.

More than Pictures

<image009.jpg>There are two basic UAV designs on the market today; the first has a commercial camera attached to the bottom of an aerial platform; the second is a UAV system that has custom cameras integrated in the system. While the first type of system may allow for a choice of cameras, the only information provided is imagery. A system with an integrated camera allows for metadata to be tagged with the picture or video stream.

Geographical metadata allows images to be stitched together into larger picture of the area without having to give up any detail. More advanced systems can also use this information for immediate use in the navigation of the system, by providing current maps of the surroundings.

Vertical Take Off and Landing (VTOL)

UAVs are divided into two categories, Vertical Take Off and Landing (VTOL) or Fixed Wing. Each performs different tasks. While fixed wing system can fly for longer distances and duration, they require space for take-off and landing and must keep moving, unable hover over a location. VTOL systems require limited space for take off and landing, some as little as 5 m^2, while providing improved control of take off and landings. They can hover in place, providing constant surveillance of any location.

Portability

<image010.jpg>It is important to ensure the system packaging is portable and includes everything required to carry out a successful mission. If you can't easily carry the equipment required to perform the required tasks, the UAV will be relegated to being used only for special operations.

Look for systems designed to be carried in the back of any vehicle, that can be managed by a single operator, and with kits that contain everything needed to complete a successful operation.

James J. Saunders, Director
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th Street, Des Moines, IA 50319-0049
Phone: 515-725-6310 Fax: 515-725-6320
Direct: 515-725-6305 Cell: 515-971-6106
E-mail: saunders@dps.state.ia.us
Secure E-mail: jsaunders@mocic.riss.net

NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

From: London, Brian [DPS]
Sent: Wednesday, November 14, 2012 10:06 PM
To: Saunders, Jim [DPS]
Cc: London, Brian [DPS]; Ponsetto, Steve [DPS]
Subject: Re:

Thanks

Keep going.

Sent from my Verizon Wireless 4G LTE DROID

"Saunders, Jim [DPS]" <saunders@dps.state.ia.us> wrote:

I have had our resident tech expert on it. He has some information but the information is incomplete. He has been in training this week so I haven't talked to him in the last couple of days.

He has not found a vendor yet that leases drones. I found information an a company that metro dade purchased from but they leased one drone for a dollar to metro dade after they bought one. They have been criticized, according to open source reporting, for not using them very often.

Right now the costs we are finding are between $100,000 to $150,000 so pretty expensive. We are still researching but nothing has emerged yet that would seem cost effective at this point

Jim
James J. Saunders, Director

Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th Street, Des Moines, IA 50319-0049
Phone: 515-725-6310 Fax: 515-725-6320
Direct: 515-725-6305 Cell: 515-971-6106
E-mail: saunders@dps.state.ia.us
Secure E-mail: jsaunders@mocic.riss.net

NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

From: London, Brian [DPS]
Sent: Wednesday, November 14, 2012 09:41 PM
To: Ponsetto, Steve [DPS]; Saunders, Jim [DPS]

Where are we on the drone research?
I want to keep on this. It has potential.

Sent from my Verizon Wireless 4G LTE DROID

Saunders, Jim [DPS]

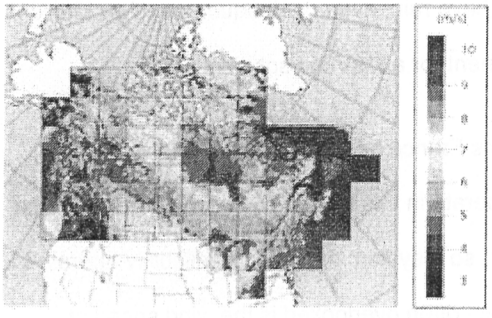
From: Saunders, Jim [DPS]
Sent: Thursday, November 15, 2012 9:27 AM
To: London, Brian [DPS]
Cc: Ponsetto, Steve [DPS]; Noelck, Christopher [DPS]
Subject: RE:

Sir,

An interesting white paper on the topic I thought you might find interesting.

Jim

Considerations in Selecting a Small UAV for Police Operations



Small, or micro, Unmanned Aerial Vehicles (UAVs) or Unmanned Aerial Systems (UAS) are quickly entering the market for practical use in law enforcement, choosing the right solution can appear daunting. With equipment purchases typically between 15 and 5 percent of total budgets, making the right decision is essential.

How do you now which system provides the best solution for your needs?

First it is important to define what your needs are. Policing organizations are constantly being asked to do more with greater financial constraints. Therefore the solution needs to be able to support multiple situations such as:

- Accident Investigation
- Search and Rescue
- Drug Plantation Investigations
- Disaster Management
- Crowd Control
- Explosive Ordinance Disposal
- CBRNE Incident
- Covert Tactical Surveillance
- Forensic Scenes
- Support for Arrest Warrants
- Gunfire Rescue of officers and citizens
- VIP Security support

- Hostage and Barricade Situations
- Perimeter security

First we will review the requirements that law enforcement need to evaluate when selecting a small unmanned aerial system, followed by reviewing a system that meets these needs.

Needs

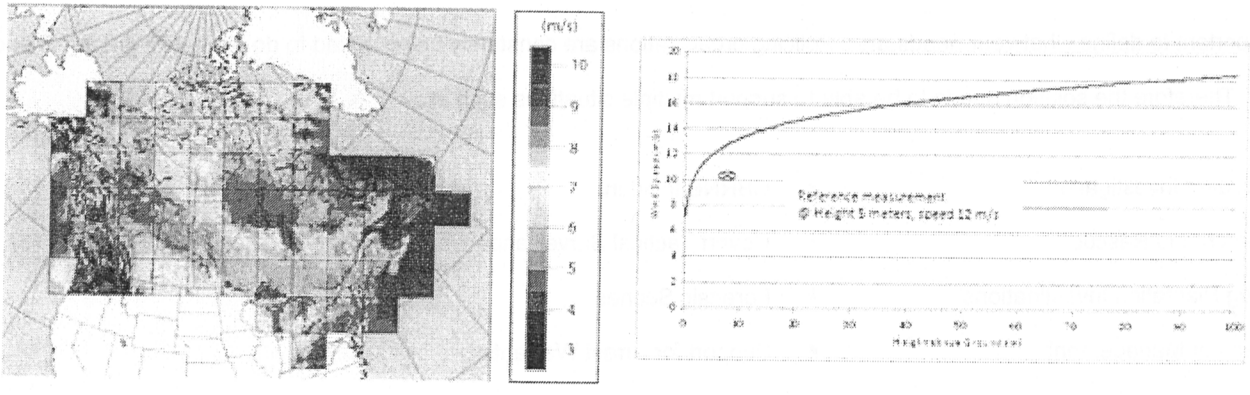
The need for police organizations is to provide immediate aerial intelligence while ensuring the safety of police personnel, civilians and property. There are many ways this need can be met. Each has different costs and requirements. For the purpose of this paper, the focus is on the criteria for the selection of a small UAV that be used to support police operations.

Operation Conditions

Crime and accidents don't only occur on calm, sunny days. Police must be ready to respond to an incident at any time, therefore the equipment they choose must be capable of use in a variety of weather conditions - from sunny warm days, through rain and snow, high temperatures and significant wind. For example, in Vancouver, Canada, 45% of the days have rain, even in Albuquerque, New Mexico USA, the over 11% of the days have rain. Those numbers represent a significant requirement for a UAV the solution.

With any UAVs, the ability to operate safely in wind is an impfortant selection criterion. Paris France has, on average, 44 days (>12%) each year where the wind is in excess of 34mph (55 km/hr). If an aerial vehicle can not operate in this type of condition, there would be a significant loss to operations. Even New York City averages winds greater than 19km/hr, so a system that cannot reliability operate in even moderate winds would have a negative impact on the usefulness of the product. A fact often overlooked is the wind speed at flying altitude – not just the average wind speed, but also the strength and severity of gusts. With buildings, trees and land formations often blocking or reducing the effect of wind near the ground, much higher winds are typically experienced by a UAV at even "low" altitudes.

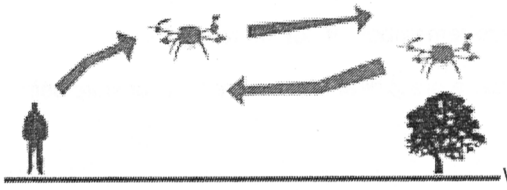
Below are average wind plots for Canada. Over 50% of Canadian airspace has average winds greater than 25 km/h at 80 m, a typical operating altitude for a small UAV.



click to enlarge

Flight Time

Most vendors of small UAVs advertise similar length of flight time. However, it is important to read fine print. To boost their numbers, some vendors' advertised flight time is for the aerial vehicle without a payload (camera) and under ideal conditions (e.g. no wind, at 20°C). When a payload is attached the useful operational the flight time can be reduced by over 50%.



While the length of flight for small UAVs is still shorter than most organizations feel they need, when actually trying a UAV, many people are surprised by the amount of information that can be gathered in just 20 minutes. Often organizations incorrectly base their assumptions around how long it currently takes to get the information. With many systems, data is only stored on-board the craft and cannot be accessed until the vehicle lands - this can negate the value of long flight times, as the longer a vehicle is flying, the longer the delay to access the imagery.

An additional solution, to delivering longer mission times or providing continuous surveillance is the use of multiple vehicles. Advanced UAV systems allow multiple vehicles to be in the air under the control of a single user, providing a persistent stare by having a 2nd aerial vehicle take over surveillance while the 1st vehicle returns for a new battery.

Safety

Safety is always a focus of any law enforcement organization. Safety of officers and civilians, as well as property must be considered for all equipment used. It is important the UAV system has been designed with safety as a priority, not added on after the fact.

Features that support safe operation can include:

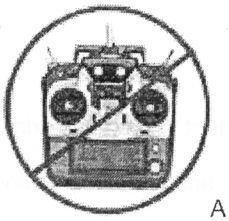
- The ability of the system to **know when the power source is running low,** inform the pilot, and if necessary fly home.
- Reporting when **wind speed** is excessive and the vehicle should return to the ground or the ability to set user imposed **max range fencing** in which the vehicle is allowed to fly. This reduces the pressure the pilot may feel to fly when he/she is unsure of the safety of the conditions.
- Not permitting the vehicle to fly if any of the onboard systems had detected a fault.
- Intelligent response if communication is lost between the aerial vehicle and the operator.

Having safety built into the system allows the operator to focus on the job of collecting the information at the scene.

Cost

With any major equipment purchase, the purchase price is only a part of the real cost to the organization; others include **training**, **re-training**, **skills practise, maintenance**, **repair** and **new features**.





A simple touch screen interface requires orders of magnitude less **training** than an RC controller. The training cost saving resulting from selecting a system that is designed for ease-of-use versus an RC controlled system is over 75%. If equipment is not used continually it is imperative that the interface is easy to remember. If not, there will be lost opportunities as well as significant **re- training** and testing. In an emergency, pilots can feel a great deal of pressure to fly despite being out of practice or in situations beyond their skill level.

Maintenance costs need to be included in the decision process as these can have a significant impact on tight budgets. A modular system that has been design to eliminate the need for maintenance reduces the both the direct costs of doing the work and the indirect cost of not having the equipment available during the maintenance time.

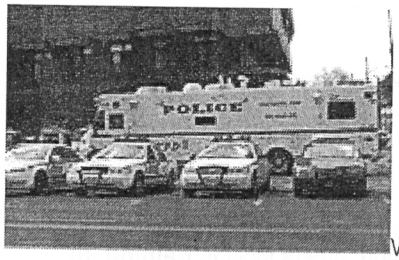
Any system will at some time require **repairs**. For a uni-body designed system the whole unit is returned when repair work needs to be performed. Modular systems require that only the failure part need be returned for repair or replaced with a new part which can be kept in stock.

New features and payloads are always being developed by manufacturers. It is important to ensure a system purchased today will work with new features or payloads. Predicting the future of any product is difficult, but one of the keys to reducing your risk is to check to see that currently existing payloads are easily interchanged and make sure the system is designed to *allow the user to upgrade* without having to return the unit to the factory.

Single User Operation

Many systems are designed in a way that requires more than one operator. A system designed for single operator use gets the job done faster, more reliably and at a lower cost. It must providing the operator with all of the flight and payload controls, along with a display of the visual data being collected. A system can only be truly a single operator design when the system manages the vehicle's flight, letting the **user focus on where to fly, not how**.

Network Ready

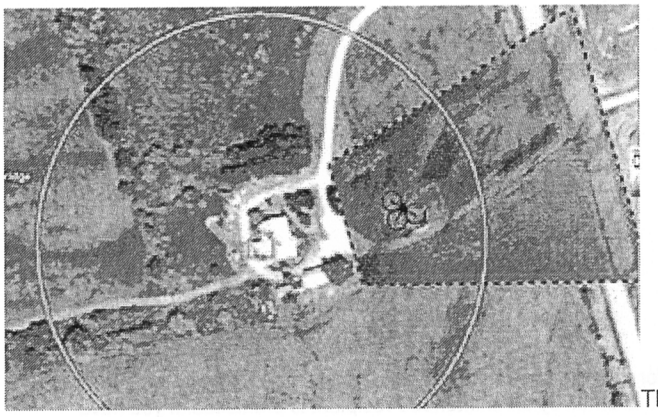


While a single UAV streaming images to the ground works well for standalone missions, the ability to distribute the information to a command center or other decision makers is what allows an organization to really get the most from the investment. Systems that do not provide this ability will be left behind when they could be most useful.

Quick Change

Most UAV systems offer multiple payload options, often cameras. Changing from one payload to another needs to be seamless to the operator. The requirements of an operation can change quickly and the equipment being used must be able to keep up. Ensure the system allows not only a quick physical change in all weather conditions, but also ensures the electronics and software recognizes the change automatically. Without the ability to quickly adapt to the needs of the operation, valuable time will be lost setting up the system after each change.

More than Pictures



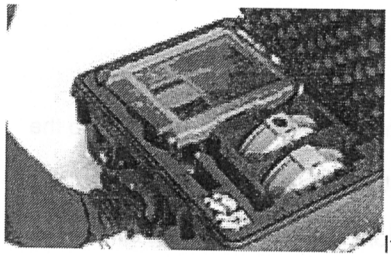
There are two basic UAV designs on the market today; the first has a commercial camera attached to the bottom of an aerial platform; the second is a UAV system that has custom cameras integrated in the system. While the first type of system may allow for a choice of cameras, the only information provided is imagery. A system with an integrated camera allows for metadata to be tagged with the picture or video stream.

Geographical metadata allows images to be stitched together into larger picture of the area without having to give up any detail. More advanced systems can also use this information for immediate use in the navigation of the system, by providing current maps of the surroundings.

Vertical Take Off and Landing (VTOL)

UAVs are divided into two categories, Vertical Take Off and Landing (VTOL) or Fixed Wing. Each performs different tasks. While fixed wing system can fly for longer distances and duration, they require space for take-off and landing and must keep moving, unable hover over a location. VTOL systems require limited space for take off and landing, some as little as 5 m^2, while providing improved control of take off and landings. They can hover in place, providing constant surveillance of any location.

Portability



It is important to ensure the system packaging is portable and includes everything required to carry out a successful mission. If you can't easily carry the equipment required to perform the required tasks, the UAV will be relegated to being used only for special operations. Look for systems designed to be carried in the back of any vehicle, that can be managed by a single operator, and with kits that contain everything needed to complete a successful operation.

James J. Saunders, Director
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th Street, Des Moines, IA 50319-0049
Phone: 515-725-6310 Fax: 515-725-6320
Direct: 515-725-6305 Cell: 515-971-6106
E-mail: saunders@dps.state.ia.us
Secure E-mail: jsaunders@mocic.riss.net

NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

From: London, Brian [DPS]
Sent: Wednesday, November 14, 2012 10:06 PM
To: Saunders, Jim [DPS]
Cc: London, Brian [DPS]; Ponsetto, Steve [DPS]
Subject: Re:

Thanks

Keep going.

Sent from my Verizon Wireless 4G LTE DROID

"Saunders, Jim [DPS]" <saunders@dps.state.ia.us> wrote:

I have had our resident tech expert on it. He has some information but the information is incomplete. He has been in training this week so I haven't talked to him in the last couple of days.

He has not found a vendor yet that leases drones. I found information an a company that metro dade purchased from but they leased one drone for a dollar to metro dade after they bought one. They have been criticized, according to open source reporting, for not using them very often.

Right now the costs we are finding are between $100,000 to $150,000 so pretty expensive. We are still researching but

nothing has emerged yet that would seem cost effective at this point

Jim
James J. Saunders, Director
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th Street, Des Moines, IA 50319-0049
Phone: 515-725-6310 Fax: 515-725-6320
Direct: 515-725-6305 Cell: 515-971-6106
E-mail: saunders@dps.state.ia.us
Secure E-mail: jsaunders@mocic.riss.net

NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

From: London, Brian [DPS]
Sent: Wednesday, November 14, 2012 09:41 PM
To: Ponsetto, Steve [DPS]; Saunders, Jim [DPS]

Where are we on the drone research?
I want to keep on this. It has potential.

Sent from my Verizon Wireless 4G LTE DROID

Saunders, Jim [DPS]

From: Noelck, Christopher [DPS]
Sent: Monday, November 05, 2012 1:57 PM
To: Feddersen, Paul [DPS]; Saunders, Jim [DPS]
Subject: Aeryan Drone
Attachments: aeryon-scout.pdf

I have done some research and have sent an email to the company in Canada to send me more information.

Attached is a PDF of one I found.

C. J.

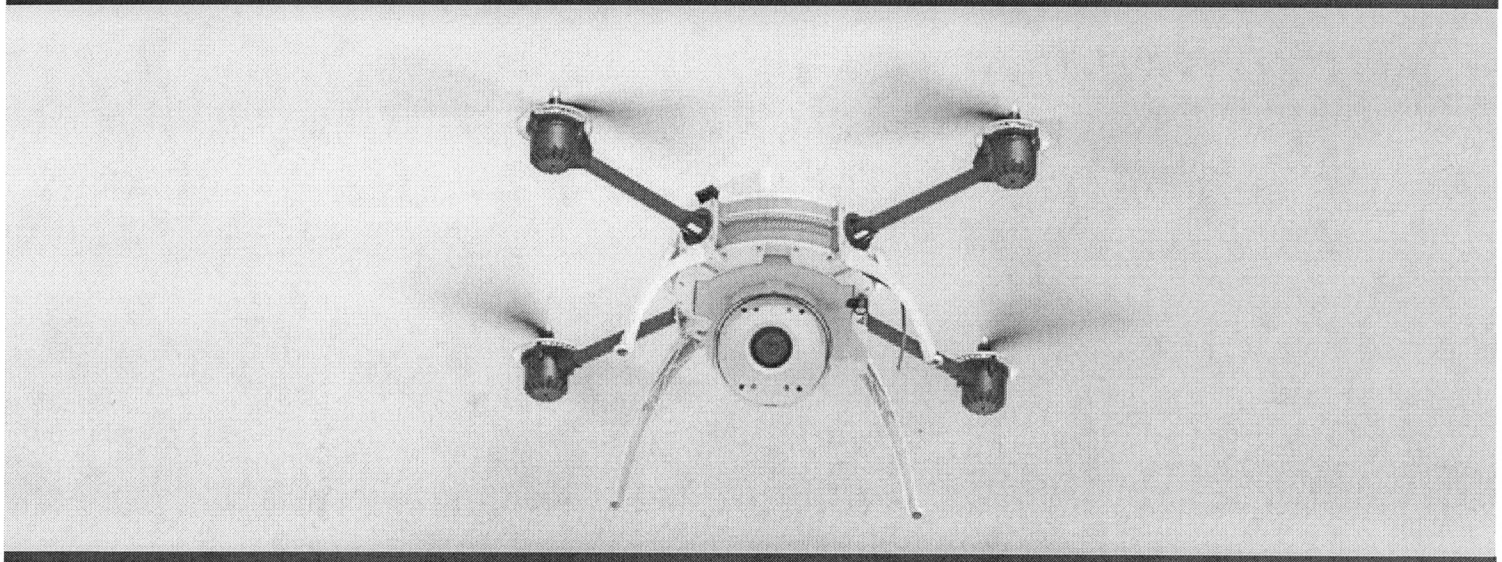
C. J. Noelck, Special Agent
Division of Intelligence and Fusion Center
Iowa Department of Public Safety
215 East 7th St.
Des Moines, IA 50319-0049
Cell: (712)-250-0116
Fax: (712)-243-4736
noelck@dps.state.ia.us
christopher.noelck@leo.gov
cnoelck@mocic.riss.net

NOTICE This email message (including any file attachments transmitted with it) is for the sole use of the intended recipient(s) and may contain confidential and legally privileged information. Any unauthorized use or disclosure of this email by an unintended recipient is prohibited. If you have received this e-mail in error please notify the sender by return e-mail and destroy all copies of the original message. No representation is made that this email or any attachments are free of viruses. Virus scanning is recommended and is the responsibility of the recipient.

SCOUT Micro-UAV

Aeryon Labs Inc.

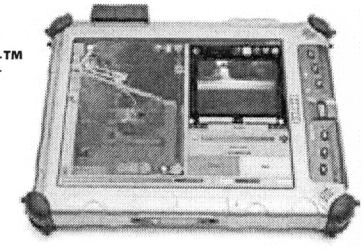
Aerial Intelligence in the Palm of Your Hand



The Aeryon Scout™ is a small, easy-to-operate aerial vehicle that records and transmits high-quality images and video or other data

Anyone Can Fly

Autonomous capabilities and simple point-and-click navigation and camera controls make it possible for anyone to fly the Scout™ with only a few minutes of training.



Advanced fly-safe features and automated flight planning software allow the operator to focus on the task at hand.

Fly Anywhere, Anytime

The Scout operates reliably in the most demanding weather and wind conditions – when other systems simply cannot fly:

- Sustained winds up to 50km/h (gusts to 80km/h)
- Ruggedized and weather sealed, operating temperatures from -30 °C to +50 °C
- Beyond line-of-sight 3KM range, up to 25 minute flight time with payload

Airborne in seconds - weighing less than 3lbs, the entire Scout system fits easily into a small case or backpack and snaps together without tools.

Hot-swappable Payloads

Integrated stabilized imaging payloads switch in seconds and are designed for all-weather environments.

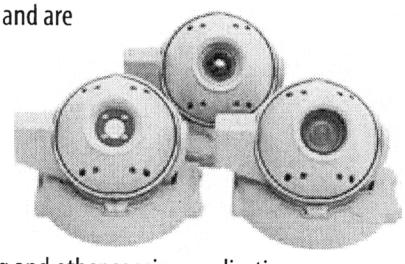


Photo3S™ - 3-Axis Stabilized High-Res Still Images

VideoZoom10X™ - 10x Optical Zoom Video

Thermal FLIR - Thermal Infrared Video

Custom payloads are also available for specialized imaging and other sensing applications.

Additional Features



Smart Imagery
Embedded geotags and metadata enable sharing live target location, or image post-processing into stitched images, 3D models, and more.



All-Digital Network
Simultaneously stream video to multiple devices. Encryption protects against hacking, snooping, and interception.



AutoGrid™ Flight Plan
Create automated flight plans on-the-fly to generate extremely detailed cm/px image mosaics and maps, or monitor an area or perimeter.



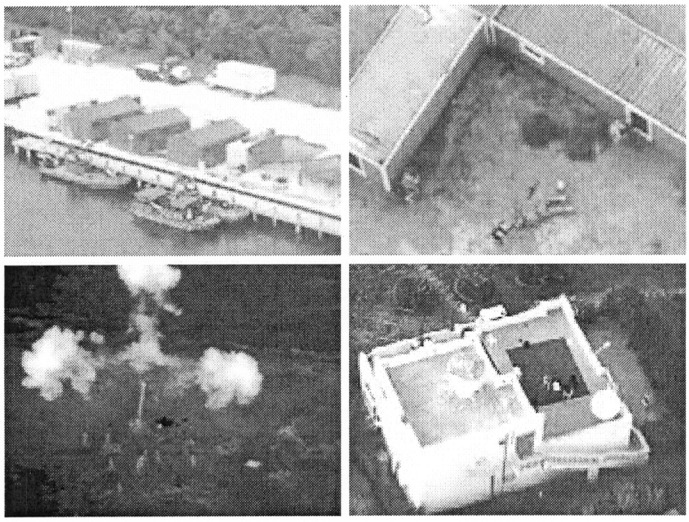
Automatic FollowMe™
Escort or follow a person or vehicle to maintain continuous visual observation of the subject and surrounding terrain or infrastructure.

Visit www.aeryon.com for more details

info@aeryon.com +1 519-489-6726 www.aeryon.com @aeryonlabs

©2012

Aeryon Scout Applications



MILITARY

Man-packable and immediately deployable for over-the-hill aerial intelligence in any environment, the all-digital Scout system brings secure and simultaneous tactical situational awareness to both ground forces and remote command. Advanced autonomous capabilities and simple touchscreen controls require minimal training for soldier, squad, or platoon level deployment. Unlike fixed-wing UAVs, Vertical Take-Off and Landing (VTOL) flight requires no launch equipment, enables fixed hover for precise observation, and facilitates low-risk retrieval on land or ship - its small size and extremely quiet operation are also ideal for covert operations. Sample applications include:

- Covert Reconnaissance & Surveillance
- Tactical Awareness & Targeting
- Perimeter & Convoy Security
- Anti-Piracy
- De-Mining
- Disaster Response

PUBLIC SAFETY

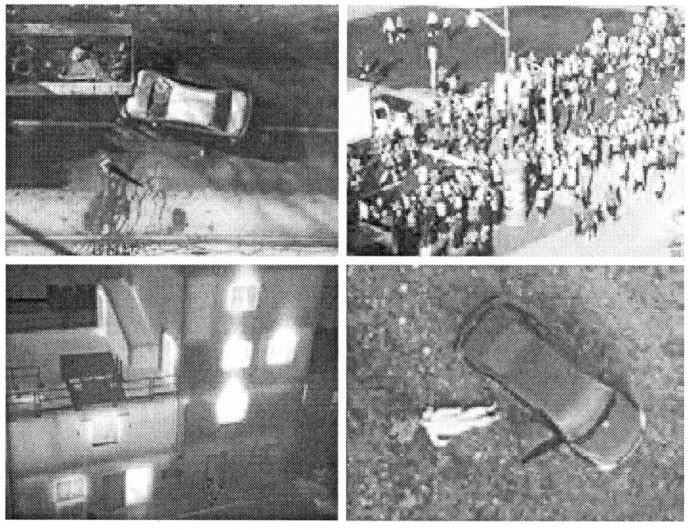
The Scout provides an immediate eye in the sky for law, fire and emergency management personnel. Any first responder can have the Scout airborne in seconds - no waiting for aircraft support or trained remote-control specialists. Automated features and fly-safe controls also reduce reliance on operator skill and minimize risk. Sample applications include:

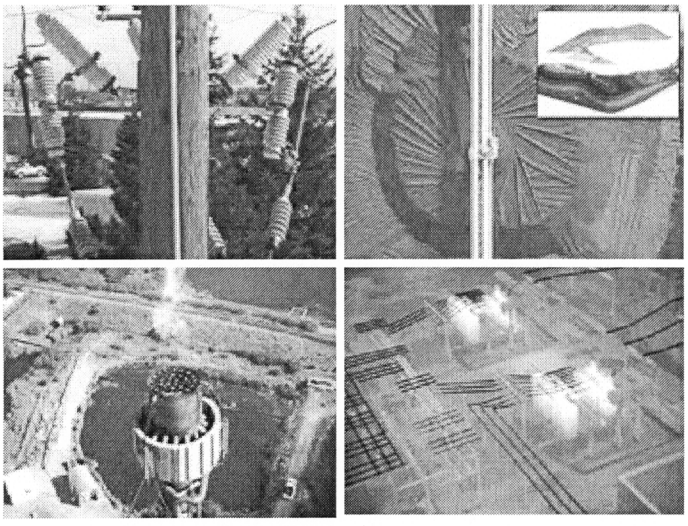
Law Enforcement

- Intelligence & Evidence Gathering
- Suspect or Missing Persons Search
- Traffic & Crowd Control
- Event & VIP Security
- Crime or Accident Investigation
- Tactical Operations (Raid, Barricade, Hostage)

Fire & Emergency Management

- Search & Rescue
- Fire Control & Damage Assessment
- HAZMAT/CBRNE Management
- Emergency & Disaster Response





INDUSTRIAL & COMMERCIAL

For commercial and industrial users the Scout is faster, cheaper, safer, and more accurate for collecting aerial imagery than conventional alternatives including satellites, planes or helicopters – and is the most reliable and easy-to-use small UAV system available. The Scout is used in a wide range of industries, and can be used by multiple departments within a single organization.
Sample applications include:

- Infrastructure Inspection
- Orthorectified Image Mosaics & Maps
- 3D Models & Volumetric Analysis
- Precision Agriculture
- Gas Leak Detection
- Environmental & Wildlife Monitoring
- Photography & Broadcast Media
- Construction Site Planning & Monitoring
- Site and Infrastructure Security
- Forestry Management

info@aeryon.com +1 519-489-6726 www.aeryon.com @aeryonlabs

©2012

Saunders, Jim [DPS]

From: Noelck, Christopher [DPS]
Sent: Friday, November 09, 2012 10:36 AM
To: Saunders, Jim [DPS]
Cc: Feddersen, Paul [DPS]
Subject: FW: [QUOTE] Information

Jim,

Give me a call on this when you have a chance.

Thanks

C. J.

C. J. Noelck, Special Agent
Division of Intelligence and Fusion Center
noelck@dps.state.ia.us
Cell: 712-250-0116

From: Cameron Waite - Aeryon Labs [mailto:cwaite@aeryon.com]
Sent: Thursday, November 08, 2012 9:02 PM
To: Noelck, Christopher [DPS]
Subject: Re: [QUOTE] Information

Thank you for your interest in our Aeryon Scout UAV. As you may have seen on our web site, the Aeryon Scout is a state of the art aerial intelligence gathering platform. It brings the high end, sophisticated capabilities of the most advanced UAV's directly into the hands of the on the ground operator. What really sets the Aeryon Scout apart is its touch-screen, map based interface, which enables any operator to instantly get high quality aerial imagery without the requirement to spend countless hours learning how to pilot the system. Also with the touch screen control you don't have to see the unit in the air to fly it, which means you can fly well beyond line of site or at night when you cannot see the system in the air. Of course, we have the latest safety features such as intelligent fault handling - where the system will automatically fly home and land if the communication link is broken, if battery levels get too low or if per-defined wind thresholds are exceeded.

Can you tell me more about your specific application? I can give you more detailed information if I better understand your usage requirements.

Police departments especially like the Scout because of its low-cost of operation, speed to deployment, and limited training requirements. It means that every officer has the ability to use the system - which helps better justify cost. Police applications include search and rescue, aerial surveillance, accident reconstruction/evidence gathering, crowd control, suspect surveillance, hazardous material applications and general investigation uses.

Here are some Police specific links:

Sample Police Applications:
http://www.aeryon.com/applications/public-safety.html

Sample Video:
http://www.youtube.com/watch?v=9EozYMN3ctQ

Disaster Response:
http://www.aeryon.com/news/pressreleases/450-aeryon-scout-micro-uas-selected-for-suas-storm-response-study.html

For GIS and other mapping applications, the Scout is a great tool. Aeryon has developed payloads specifically for this market. There are a number of options. The camera options include: EO (daylight) 3 axis stabilized camera with VGA video and 5 Mega-pixel stills, Near IR with the same specs as the daylight camera (used in conjunction with the daylight camera for generating multi spectral imagery). 3 axis stabilized Long Wave IR (Thermal) camera with 640x480 resolution, 3 axis stabilized GoPro payload (with GoPro Hero2 camera capable of 1080p x 30 fps video and 11 Mega-pixel still images. These payloads allow for a varied array of applications including 2D aerial stitching with full Geo-tagging, volumetric analysis, 3D photography and terrain management, etc. The images can be used in many Geo-stitching software packages including Pix4D, ArcGIS, and others. Software packages are available through Aeryon.

For video applications, you would use the 10X payload or the GoPro HD payload. Full video capabilities, but the 10X payload has a 10x optical zoom feature during flight. The strength with the Aeryon Scout vs any of the other fliers its its ability to hover in place with limited offset movement (of course depending on wind). The stability control of the Scout is by far the most advanced in the industry which allows the it to even fly and hold a very steady position in sustained winds up to 50 km/h and even gusts to 85 km/h. So when precision is critical, the unit is a great choice.

The system can be put into a 'grid-fly' mode which allows it to fly precise way points and image along the way. If you were interested in doing 3D maps or aerial stitched photography with full Geo-tagging, you could easily do that with the Scout. This means it may have additional uses, or other ways to generate revenue.

I've included some links to our mission summaries. These detail what the customer was utilizing the system for, and some of the successes they have flying missions.

Wildlife Studies / Educational
http://www.aeryon.com/applications/missions/379-ship-based-wildlife-observation.html

Aerial Survey / Mapping / Inspection
http://www.aeryon.com/applications/missions/318-nomealaskanews.html
http://www.aeryon.com/applications/missions/295-hydro-inspection.html
http://www.aeryon.com/applications/missions/294-flare-inspection.html
http://www.aeryon.com/applications/missions/262-autogrid.html

Volumetric Analysis
http://www.aeryon.com/applications/missions/304-gismodel.html

Police Applications / Disaster Response
http://www.aeryon.com/applications/missions/257-oil-spill-response.html
http://www.aeryon.com/applications/missions/246-haltonschoolroof.html
http://www.aeryon.com/applications/missions/201-accidentreconstruction.html
http://www.aeryon.com/applications/missions/175-growopsearch.html

Forward Reconnaissance / Military Surveillance
http://www.aeryon.com/applications/missions/176-centralamericadrug.html

Regarding the price, the cost of the system is dependent on the exact configuration required. But to give you a general idea, a full turnkey system that includes the Scout vehicle, rugged ground control station including

software, base relay station, daytime video and still camera payload, various spare parts including batteries and a mission case - everything required to operate the system - ranges from $100,000USD to $140,000USD depending on payloads required, etc. A civilian model is available starting at $60,000USD but has a shorter range of operation and limited feature set.

I would be happy to discuss your requirements with you in more detail to ensure the Scout is the best system for you. Just let me know when you're available.

Cheers,

Cameron Waite
Manager, Global Accounts

Aeryon Labs Inc.

Work: +1 519.489.6726 x275
Mobile: +1 519.571.5290
Email: cameron@aeryon.com

YouTube

On 05/11/2012 2:48 PM, C. J. Noelck wrote:

Name
C. J. Noelck

Email
noelck@dps.state.ia.us

Phone
712.250.0116

Type of Inquiry
I am a customer interested in using Aeryon sUAS

Primary Industry
Public Safety

How did you hear about Aeryon?
Web Search

Subject
Information

Message
I am a Special Agent with the Iowa Department of Public Safety. We are involved in a multitude of Operations with our Fusion Center assisting Federal, State and Local Law Enforcement. I have been tasked with researching the use of drones for these overt operations.

Please send me any information you can to include a price for FLIR and Daytime Camera Units.

Thank-you

SA C. J. Noelck